

Eria merguensis Lindl. (Orchidaceae) – a new addition to the Indian flora

S.K. Singh¹, Ramesh Kumar¹, Avishek Bhattacharjee^{2,3}, Sachin Sharma¹

¹Botanical Survey of India, Eastern Regional Centre, Lower New Colony, Laitumkhrach, Shillong – 793 003, Meghalaya, India

²Central National Herbarium, Botanical Survey of India, A.J.C.B. Indian Botanic Garden, Howrah – 711 103, West Bengal, India.

³Author for correspondence: avibsi@rediffmail.com

Abstract

Eria merguensis Lindl., an uncommon orchid, is reported here for the first time from India. The conservation status of the species is discussed in Indian context.

Introduction

The genus *Eria* Lindl. *sensu lato* (Orchidaceae: Epidendroideae: Eriinae) is highly polymorphic and represented by c. 500 species (Pridgeon 1992), distributed from Sri Lanka to Tahiti (Ormerod 2014). In India, *Eria s.l.* is represented by 60 taxa (Agrawala and Chowdhery 2013).

The circumscription of the genus *Eria* is still controversial. Lindley (1858) recognized 11 sections, Bentham (1881) recognized 10 sections, Kränzlin (1911) recognized 8 sections under *Eria*. Seidenfaden (1982) provided a list of 41 sectional names in *Eria* in his treatment. Cribb et al. (2005) reinstated several earlier recognized genera that had been reduced to sectional ranks, but their concepts have not been accepted in some recent works (Agrawala and Chowdhery 2013; Agrawala and Ormerod 2014; Ormerod 2014) because the “circumscriptions of these genera are overlapping and not precisely defined” (Agrawala and Chowdhery 2013, p. 116); some segregate genera “seem difficult to define” and “the definition of the genus *Callostylis* Blume seems somewhat broad” (Ormerod 2014, p. 77).

During field explorations between 2010 and 2013, the authors collected some plants of *Eria* from North Himen Village in the Kolasib district and Murlen National Park in the Champhai district, both within the State of Mizoram (Fig. 3). A voucher specimen of the first collection could not be prepared due to lack of flowers and scarcity of specimens. However, a single living clump was transplanted to the Orchidarium of the Botanical Survey of India, Eastern Regional Centre, Shillong for ex-situ conservation and further study. Critical study of live plant material from North Himen and a herbarium specimen from Murlen National Park revealed their identity as *Eria merguensis* Lindl., a species hitherto unknown from India.

Blume (1825) described the genus *Mycaranthes* with 3 species (*Mycaranthes oblitterata* Blume, *M. latifolia* Blume and *M. lobata* Blume). Reichenbach (1857) treated *Mycaranthes* as a section of *Eria* for the first time and placed all of Blume's three species of *Mycaranthes* along with another species of *Eria*, viz. *E. javensis* Zoll. & Moritzi, in the section *Mycaranthes* (Blume) Rchb.f. Lindley (1858) described *E. merguensis* and placed it in section *Mycaranthes* along with *E. stricta* Lindl. and *E. retusa* (Blume) Rchb.f. Lindley (1858) had misapplied the sectional name *Mycaranthes*, and therefore the new section *Secundae* Leavitt was created to accommodate the misplaced species. Seidenfaden (1982) placed *Eria merguensis* in section *Secundae* with other species of *Eria*, viz. *E. siamensis* Schltr. and *E. porteri* Seidenf. & A.D. Kerr. In the present communication we prefer to follow Seidenfaden's treatment but are aware that further studies may place *Eria merguensis* in a different section or genus for that matter. A detailed taxonomic account of the species is provided below.

Taxonomic treatment

Eria merguensis Lindl., *Journal of the Proceedings of the Linnean Society, Botany* 3: 52 (1858); HG Reichenbach, *The Gardeners' Chronicle, new series* 13: 616 (1880); Seidenfaden, *Opera Botanica* 62: 82 (1982).

Pinalia merguensis (Lindl.) O. Kuntze, *Revisio Generum Plantarum* 2: 679 (1891).

Mycaranthes merguensis (Lindl.) Rauschert., *Feddes Repertorium* 94: 456 (1983).

Lectotype (designated by Seidenfaden 1982): Mergui, *Griffith* 1034 (K, image!, [as 'type' by Seidenfaden, *loc. cit.*]);

Residual syntype: Moulmein, *Lobb* s.n. (K-LINDL).

Epiphytic, 8–20 cm tall herbs. Pseudobulbs crowded, clavate to cylindrical-clavate, 4–10 cm long, 0.5–1.2 cm wide. Leaves 2 or 3, arising from subapical nodes of pseudobulbs, oblong-ovate to oblong-lanceolate, 5–11 cm long, 0.7–1.5 cm wide, blunt and unequal at apex, lamina narrowed to form c. 5 mm long petiole-like structure, midrib distinct. Inflorescence a subterminal raceme, 1 or 2 from a pseudobulb, erect, densely 16–68-flowered, flowers facing outwards in all directions, covered with white tomentose hairs; peduncle 2–6 cm long; rachis 2–10 cm long. Floral bracts minute, c. 1 mm long, 0.5 mm wide. Flowers densely woolly externally, yellow; sepals similar, c. 1.5 mm long, 1.2 mm wide, ovate to ovate-orbicular, obtuse at apex, white tomentose outside, 3-veined, lateral sepals sometimes slightly oblique; petals ovate to oblong-ovate, c. 1.2 mm long, 0.8 mm wide, obtuse at apex. Lip obscurely 3-lobed, c. 1.4 long, subacute to obtuse at apex, with 2 fat parallel longitudinal calli; calli truncate and papillose at apex. Pollinia 8, yellow, clavate, each c. 0.3 mm long. Fig. 1, 2.

Flowering and fruiting: January–April

Habitat: The plants are found growing on the branches of trees at the edges of tropical and subtropical forests, at elevations of 600–1600 m.

Distribution: India (reported here), Myanmar, Thailand.

Etymology: The generic name *Eria* is derived from the Greek 'erio' (wool) in reference to the outside of the sepals and petals, and the specific epithet is after the type-locality (Mergui) of the species.

Specimens examined: INDIA: Mizoram, Champhai, Murlen National Park, 1550 m, 15 Apr 2013, *Ramesh Kumar et al.* 128466 (ASSAM). MYANMAR: Moulmein, Jan 1897, *Peche* s.n. (CAL); Feb 1897, *Peche* s.n. (CAL); Mergui, Mar 1911, *Meebold* 14510 (CAL).

Diagnostic features: *Eria merguensis* is morphologically similar to *E. porteri* (Seidenfaden 1982), a probable synonym of *E. pudica* Ridl., but can be distinguished by its dense, 16–68-flowered inflorescence (vs 10–12-flowered inflorescence in *E. porteri*), sepals c. 1.5 mm long (vs sepals c. 3 mm long in *E. porteri*) and papillose apices of labellum calli (vs smooth labellum calli in *E. porteri*). Further, the hairs on the pedicel plus ovary and sepals in *E. merguensis* are coarsely tomentose, where in *E. porteri* the hairs are finely tomentose.

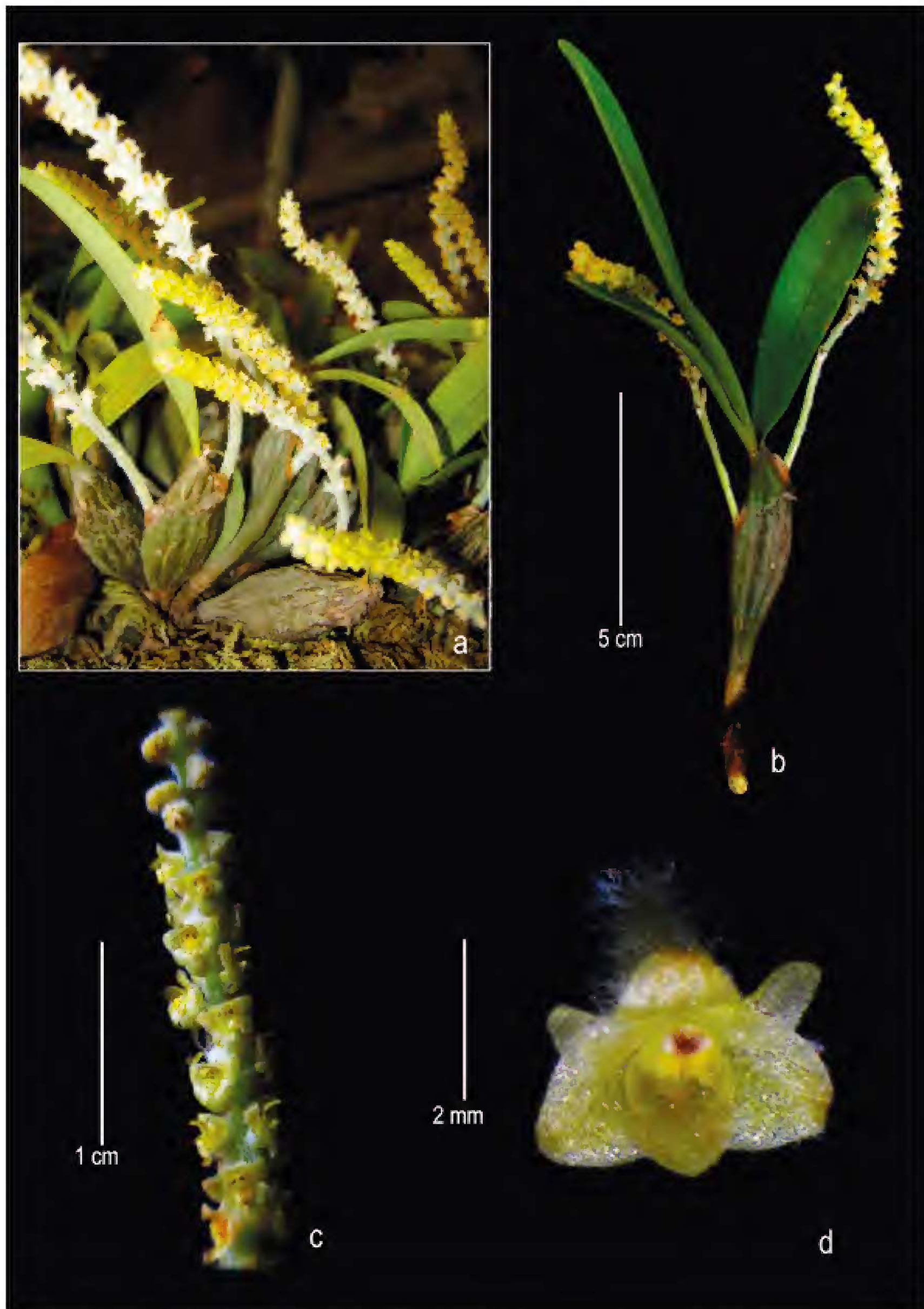


Fig. 1. *Eria merguensis* Lindl. a–b, habit; c, portion of rachis; d, flower.

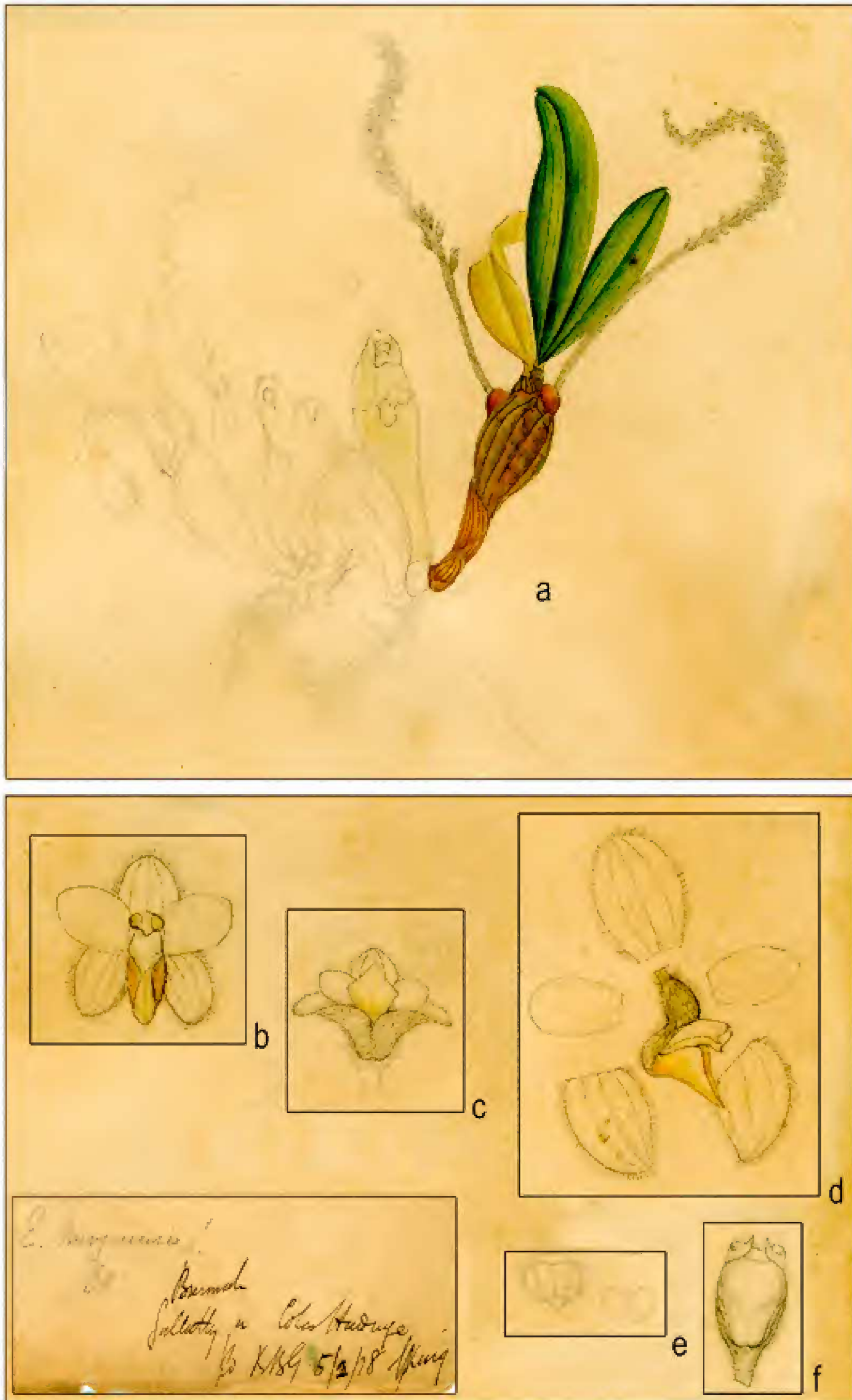


Fig. 2. *Eria merguensis* Lindl. **a**, habit; **b**, Flower (front view); **c**, flower (basal view); **d**, sepals, petals, lip, column and pedicel plus ovary; **e**, anther (left) and pollinia; **f**, column. [Portions of an illustration (rearranged) at CAL prepared on a herbarium sheet (with a label) possibly by Robert Pantling]

Conservation status in India: Endangered [EN B1ab(ii) D]

Eria merguensis is presently reported only from three countries, viz. India (here reported), Myanmar and Thailand. In India, we could locate c. 150 mature individuals (Criterion D) of *E. merguensis* growing in 2 localities in the State of Mizoram (Fig. 3), i.e. in forests of North Himen village, Kolasib and Murlen National Park, Champhai. In India, the Extent of Occurrence (EOO, Criterion B1) of *E. merguensis* is c. 3000 sq km and Area of Occupancy (AOO, Criterion B2) is c. 8 sq km. However, we predict that the AOO may be slightly higher (but of course <500 sq km) as the species may occur in a few more nearby locations due to similar type of habitat and species-composition. We have not observed any natural or man-made threat to this epiphytic species in Murlen National Park (Protected Area), but it is under moderate threat near the North Himen village due to dependency of the tribal people on the forest. Based on its EOO (Criterion B1), the number of mature individuals (Criterion D) and the present threat (near North Himen village) we assessed *E. merguensis* as Endangered [EN B1ab(ii) D] in India as per IUCN's guidelines (IUCN, 2012). The status of *E. merguensis* at global level could not be assessed at present due to lack of sufficient data on Thai and Burmese specimens and their present populations.

Acknowledgments

The authors are thankful to the Director, Botanical Survey of India, Kolkata for facilities and to Head of Office, Botanical Survey of India, Eastern Regional Centre, Shillong for encouragement. Authors extend their sincere thanks to the officials of Forest Department, Mizoram for the logistic support during field explorations and the anonymous reviewers for refining the manuscript. One of the authors (AB) is thankful to Mr. Olivier Hasinger, SSC Network Support Officer, IUCN for providing ArcGIS software on behalf of IUCN/SSC for Red Listing of Indian orchids. The authors gratefully acknowledge the in-depth advice provided by two anonymous reviewers.

References

- Agrawala DK, Chowdhery HJ (2013) Conspectus of the genus *Eria* Lindl. (Orchidaceae) in India. *Journal of the Non-Timber Forest Products* 20(2): 115–142
- Agrawala DK, Ormerod P (2014) A New Species of *Eria* (Orchidaceae) from India under the Section *Cylindrolobus*. *Taiwania* 59(3): 206–209
- Bentham G (1881) Notes on Orchideae. *The Journal of the Linnean Society, Botany* 18: 281–360 <http://dx.doi.org/10.1111/j.1095-8339.1881.tb01258.x>
- Blume CL (1825) *Bijdragen Tot De Flora Van Nederlandsch Indie*. P. 552. (Lands Drukker Ij: Batavia)
- Cribb PJ, Ng YP, Pridgeon AM, Wood J, Veitch NC, Grayer RJ (2005) Podochileae subtribe Eriinae. Pp. 532–587 In Pridgeon AM, Cribb PW, Chase MW, Rasmussen FN (eds.). *Genera Orchidacearum Volume 4*. (Oxford University Press: Oxford)
- IUCN (2012) Guidelines for Application of IUCN Red List Criteria at Regional and National Levels: Version 4.0. (IUCN: Gland, Switzerland and Cambridge, UK)
- Kränzlin F (1911) *Orchidaceae-Monandrae-Dendrobiinae* 2. Pp. 1–182 in Engler A (ed) *Das Pflanzenreich* Hft. 50. (Wilhelm Engelmann: Berlin)
- Lindley J (1858) Contribution to the Orchidology in India – No. 2. *Journal of the Proceedings of the Linnean Society, Botany* 3: 1–63 <http://dx.doi.org/10.1111/j.1095-8339.1858.tb02055.x>
- Ormerod P (2014) A synopsis of *Eria* Lindl. (Orchidaceae) section *Cylindrolobus* (Blume) Lindl. (Orchidaceae: Eriinae) in Malesia. *Harvard Papers in Botany* 19(1): 77–95 <http://dx.doi.org/10.3100/hpib.v19iss1.2014.n6>
- Pridgeon A (1992) *What Orchid is that?* Pp. 1–304. (Lansdowne Publishing Co.: Sydney)
- Reichenbach HG (1857) Orchideae Zollingerianae itineris primi recensentur. *Bonplandia* 5: 53–58
- Seidenfaden G (1982) Orchid genera in Thailand X. *Trichotosia* Bl. and *Eria* Lindl. *Opera Botanica* 62: 1–128